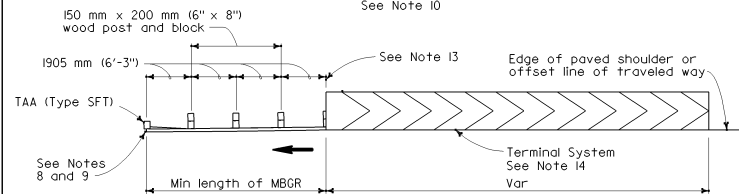


### TYPE 1A LAYOUT

(TYPICAL STRUCTURE APPROACH INSTALLATION)  
See Note 10

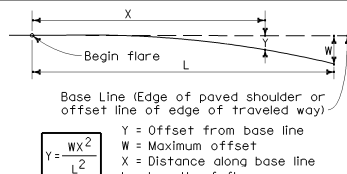


### TYPE 1B LAYOUT

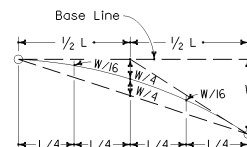
(TYPICAL EMBANKMENT INSTALLATION)  
See Note 10

#### NOTES

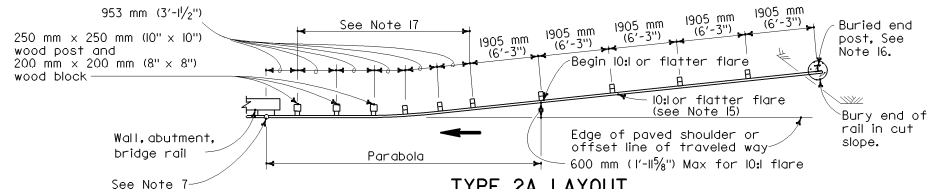
- Post, blocks and hardware to be used are shown on Standard Plans A77B, A77C and A77CA.
- Guard rail post spacing to be 1905 mm (6'-3'') center to center, except as otherwise noted.
- Except as noted, posts shown are 150 mm x 200 mm (6' x 8'') wood, MW 150 mm x 14 mm (W6 x 8.5 or W6 x 9) steel post with 200 mm x 200 mm (8' x 8'') notched wood blocks may be used for 150 mm x 200 mm (6' x 8'') wood posts and blocks where applicable and when specified.
- Rail elements to be installed as shown on Standard Plan A77A for wood post and wood blocks installations and as shown on Standard Plan A77AA for steel post and wood block installations.
- Direction of traffic indicated by  $\rightarrow$ .
- For connection details, see Standard Plans A77J or A77K.
- For terminal anchor assembly (Type CA) details, see Standard Plan A77I. Where a crash cushion is required as specified in Note 11 and the crash cushion attaches to the ends of the guard railing, the terminal anchor assembly (Type CA) and return section may not be required (see Project Plans).
- For terminal anchor assembly (Type SFT) details, see Standard Plan A77G. Terminal Sections not to be installed on trailing end of guard railing constructed adjacent to one-way roadways.
- On two-way roadways less than 18 m (60') in width, a terminal system is to be used in place of the terminal anchor assembly (Type SFT) at the trailing end of guard railing for embankment installations.
- For details of a terminal system typically used as a flared end treatment on Type 1A and Type 1B Layouts, see Standard Plan A77L. For details of terminal system typically used on Type 1A and Type 1B Layouts where site conditions will not accommodate a flared end treatment, see Standard Plans A77M and A77N. For embankment widening details to accommodate terminal system end treatment, see Standard Plan A77F.
- A crash cushion is required for Type 3A layout, when the end of the guard railing is within 9.0 m (30') of the edge of traveled way (ETW) of approaching traffic. For the type of crash cushion to be used, see Project Plans and Special Provisions.
- When width "W" exceeds 3.8 m (12'-6'') to calculate the length of parabolic flare, use "L=3W" and round to nearest 3.8 m (12'-6'').
- As site conditions dictate, additional 3.8 m (12'-6'') lengths of guard railing with post spacing at 1905 mm (6'-3'') may be required at the point shown.
- For the type of terminal system to be used, see Project Plans and the Special Provisions.
- The 10d or flatter flare is based on the edge of the paved shoulder or offset line of edge of traveled way. The length of guard railing within the 10d or flatter flare may be increased by 3.8 m (12'-6'') lengths, as site conditions dictate.
- For buried end anchor details, see Standard Plan A77IA.
- Use a flat plate washer on the rail face when attaching rail element to these post. Wood post with wood block are only to be used for these posts and blocks.



### PARABOLIC FLARE OFFSETS

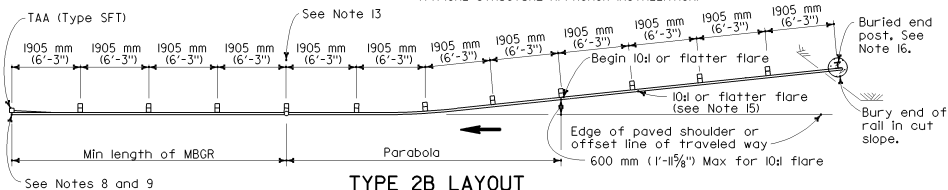


### TYPICAL PARABOLIC LAYOUT



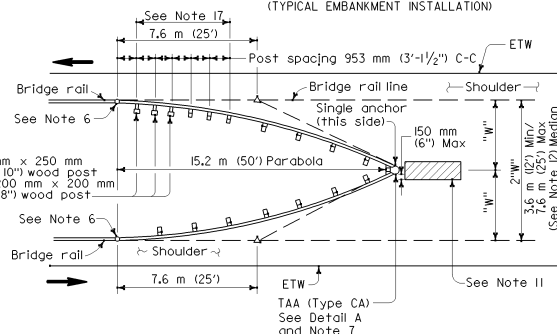
### TYPE 2A LAYOUT

(TYPICAL STRUCTURE APPROACH INSTALLATION)

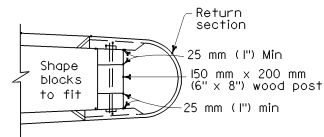


### TYPE 2B LAYOUT

(TYPICAL EMBANKMENT INSTALLATION)



### TYPE 3A LAYOUT



#### DETAIL A

## METAL BEAM GUARD RAILING TYPICAL LAYOUTS

These "Standard Plans for Construction of Local Streets and Roads" contain units in two systems of measurement: International System of Units (SI or "metric") and United States Standard Measures shown in the parentheses (). The measurements expressed in the two systems are not necessarily equal or interchangeable. See the "Foreword" at the beginning of this publication.

NO SCALE

A77D

DIST	COUNTY	ROUTE	POST MILES	SHEET TOTAL
			TOTAL PROJECT	NO. SHEETS

REGISTERED CIVIL ENGINEER  
July 1, 2002  
PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.  
Caltrans now has a web site! To get to the web site, go to <http://www.dtd.ca.gov>